

4.3 Biological Resources

4.3.1 Affected Environment

The environmental setting discussion for the Approved Project provided in the Final EIR and Final EIS Biological Resources section (Section 3.4.2) remains generally valid, including the descriptions of the wildlife corridors and special linkages, vegetation, wildlife, and jurisdictional resources present within the Project area. Special-status plants and animals known or expected to occur in the Project area are also identified (see Final EIR and Final EIS Tables 3.4-6 and 3.4-7). Additionally, the Final EIR and Final EIS detail the effects of the 2009 Station Fire on the environmental setting for the Approved Project within the ANF. Much of the Project area along Segments 6 and 11 in the ANF continues to recover from the fire, and the Forest Service has been conducting restoration projects to minimize weed infestations and promote recovery of native vegetation.

During construction of the Approved Project one additional species has been discovered – Bingham’s (Santa Barbara) morning-glory (*Calystegia sepium* ssp. *binghamiae*). This plant was presumed extinct, classified as California Rare Plant Rank 1A, until its rediscovery during Project surveys near the entrance to the Chaffey College campus in Chino. This specimen was salvaged from the site and is currently being successfully propagated at the Rancho Santa Ana Botanic Garden. Examination of the specimen has resulted in the determination to elevate this subspecies to species status (*Calystegia binghamiae*; Brummit et al, 2012). The proposed modifications to the Approved Project (i.e., Modified Project) would not affect Bingham’s morning-glory. Other than this discovery and the post-fire recovery occurring on the ANF, the environmental setting described in the Final EIR and Final EIS for biological resources is consistent with current conditions in the Project area.

4.3.2 Applicable Laws, Regulations, and Standards

Federal, State, and local regulations protecting biological resources are described in Final EIR and Final EIS Section 3.4.3. Additions or changes to these regulations that have occurred since the publication of the Final EIR and Final EIS are described below.

Federal

Bald and Golden Eagle Protection Act. The Bald and Golden Eagle Protection Act (16 U.S.C. 668, enacted by 54 Stat. 250) protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. Take of bald and golden eagles is defined as follows: “disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.” (72 FR 31132; 50 CFR 22.3).

On November 10, 2009, the U.S. Fish and Wildlife Service (USFWS) implemented new rules (74 FR 46835) governing the “take” of golden and bald eagles. The new rules were released under the existing Bald and Golden Eagle Protection Act, which has been the primary regulatory protection for unlisted eagle populations since 1940. All activities that may disturb or incidentally take an eagle or its nest as a result of an otherwise legal activity must be permitted by the USFWS under this act. The definition of

disturb (72 FR 31132) includes interfering with normal breeding, feeding, or sheltering behavior to the degree that it causes or is likely to cause decreased productivity or nest abandonment. The Modified Project would not require a take permit from the USFWS under the Bald and Golden Eagle Protection Act as it is not expected to result in take of eagles.

State

Special-Status Plants. Non-listed plants afforded protection under CEQA as special-status species were previously ranked by the California Native Plant Society (CNPS) as CNPS List 1, 2, 3, and 4 species. In March 2010, the California Department of Fish and Game (CDFG) changed the name of “CNPS List” to “California Rare Plant Rank” (or CRPR). This was done to reduce confusion over the fact that CNPS and CDFG jointly manage the Rare Plant Status Review groups (300+ botanical experts from government, academia, non-governmental organizations, and the private sector) and that the rank assignments are the product of a collaborative effort and not solely a CNPS assignment. The old name gave the false impression that CNPS solely assigned the ranks and had excessive influence on the regulatory process. Nothing about the actual process of rare plant review or rank assignment has changed and the same committee of experts from many organizations in addition to CDFG and CNPS still review each change and ultimately assign the ranks (CDFG, 2012). Species previously ranked as CNPS 1, 2, 3, and 4 species retain the same ranking, but are now labeled as CRPR 1, 2, 3, and 4 species respectively. The CRPR and associated threat ranks are defined as follows:

- 1A. Presumed extinct in California
- 1B. Rare or Endangered in California and elsewhere
- 2. Rare or Endangered in California, more common elsewhere
- 3. Plants for which we need more information - Review list
- 4. Plants of limited distribution - Watch list

Threat Code extensions:

- .1 – Seriously endangered in California
- .2 – Fairly endangered in California
- .3 – Not very endangered in California

Note that all List 1A and some List 3 plants lacking any threat information receive no threat code extension (CDFG, 2012).

Local

Southern California Association of Governments Regional Comprehensive Plan and Guide. The Final EIR and Final EIS noted that this document was in draft form in 2008 during preparation of the Draft EIR/EIS. However, the plan was finalized in 2008. The Open Space and Habitat section of the Plan addresses natural lands, community open space, and farmlands on a regional level. The intent of this chapter is to plan and provide for the conservation of the region’s open space resources focusing on interconnections among resources, future land use decisions that will either strengthen or impair the region’s ability to sustain the resources, and opportunities for inter-jurisdictional planning. The intent is to conserve the region’s open space resources in a way that will ensure sustainability over time (SCAG, 2008).

Los Angeles County 2012 Draft General Plan 2035. At the time of preparation of the Final EIR and Final EIS, the Los Angeles County General Plan was in draft form dated 2008. This plan has since

been updated to a 2012 draft version. Currently proposed Significant Ecological Areas (SEAs) that occur near the Project alignment include Altadena Foothills and Arroyos, Joshua Tree Woodlands, San Andreas, Santa Clara River, San Gabriel Canyon, Puente Hills, and Rio Hondo College Wildlife Sanctuary. These SEA areas replace previously described SEA areas. However, as described in the Final EIR and Final EIS, the CPUC has preemptive jurisdiction over construction, maintenance, and operation of public utilities in California (CPUC's General Order Number 131-D) and the Forest Service has preemptive jurisdiction for the Project on NFS lands. Therefore, no local discretionary permits, such as an SEA Conditional Use Permit, are required for the Modified Project.

Hacienda Heights Community Plan. At the time of preparation of the Final EIR and Final EIS, the 1978 Hacienda Heights Community General Plan was being updated to reflect changes in demographics and emerging needs in Hacienda Heights. The updated plan was adopted in May 2011, and as with the 1978 Plan, the Sycamore and Turnbull Canyons SEAs are included in the update. As stated in the update, a full description of the SEA Program is contained in the Biotic Resources section of the Conservation and Open Space Element of the Los Angeles County General Plan. This Element includes the following policies pertaining to the preservation of natural resources related to the Project:

- 7) Preserve significant ecological areas and habitat management areas by appropriate measures, including preservation, mitigation and enhancement.
- 12) Protect watershed, streams, and riparian vegetation to minimize water pollution, soil erosion and sedimentation, maintain natural habitats, and aid in ground water recharge.

4.3.3 Impact Analysis Approach

The impacts identified in this SEIR/SEIS are determined by comparing the impacts of the Approved Project, as disclosed in the Final EIR and Final EIS, to the impacts of the Approved Project with the implementation of the proposed modifications (i.e., Modified Project) (see Section 2.3). This analysis follows the Final EIR and Final EIS biological resources analysis, focusing on whether the proposed modifications would result in new significant impacts or substantially increase the severity of previously identified significant effects to biological resources.

4.3.3.1 Criteria for Determining Impact Significance

To satisfy CEQA requirements, conclusions are made regarding the significance of each identified impact that would result from the Modified Project. Appropriate criteria have been identified and utilized to make these significance conclusions. The following significance criteria for biological resources were derived from previous environmental impact assessments and from the CEQA Guidelines (Appendix G, Environmental Checklist Form, Section IX) and were used to analyze impacts of the Approved Project in the Final EIR and Final EIS. Impacts of the Modified Project would be considered significant and would require mitigation if the Project would:

- Criterion BIO1: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFG or USFWS.
- Criterion BIO2: Have an adverse effect, either directly or through habitat modifications, on any species listed as endangered, threatened, or proposed or critical habitat for these species.
- Criterion BIO3: Have a substantial adverse effect, either directly or through habitat modifications on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFG, Forest Service, or USFWS.

- Criterion BIO4: Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- Criterion BIO5: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Criterion BIO6: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinances.
- Criterion BIO7: Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Communities Conservation Plan (NCCP), or other approved local, regional, or state HCP.

Implementation of the Modified Project would not result in appreciable ground disturbance beyond what was analyzed in the Final EIR and Final EIS. In addition to the installation of FAA marker balls and aviation lighting, the Modified Project includes replacing seven TSPs with LSTs to allow for a reduction in structure height near the Chino Airport along Segment 8, Phase 3 (see Section 2.3.5). The originally approved structure locations would be maintained. LSTs would require a slight increase in estimated permanent impacts (0.002 acre increase per structure, totaling 0.014 acre for the seven structures). However, this slight increase in estimated impacts is well within the 15 percent margin of error included in the analysis of ground disturbance in the Final EIR and Final EIS (see Section 2 of the Final EIR and Final EIS), and the locations of the structures would be the same. Therefore, impacts associated with replacing these structures would be negligible. In addition, the Modified Project would not result in any new or substantially different impacts to biological resources for several of the identified significance criteria. These significance criteria are listed below and are not addressed further in this SEIR/SEIS:

- Criterion BIO4: Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- Criterion BIO5: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Criterion BIO6: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinances.
- Criterion BIO7: Conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP.

Significance conclusions for individual impacts are not required for compliance with NEPA. Therefore, conclusions presented in the following analysis regarding the significance of identified impacts are provided for the purposes of CEQA only.

4.3.3.2 Applicant-Proposed Measures (APMs)

APMs included within Final EIR and Final EIS Table 3.4-16 remain applicable to the Modified Project. APMs are a commitment by the Applicant (SCE) and are considered part of the Modified Project; therefore, the following discussions of impact analysis assume that all APMs will be implemented. Additionally, mitigation measures have been incorporated into the Project where it was determined that APMs do not fully mitigate the impacts for which they are presented. All mitigation measures for the Approved Project would apply to the Modified Project (see Appendix C for a list of all APMs and mitigation measures).

4.3.3.3 Impact Assessment Methodology

The biological resources impacts of the Modified Project are discussed below under subheadings corresponding to each of the significance criterion presented in Section 4.3.3.1. The analysis describes the impacts of the Modified Project related to biological resources and, for each criterion, determines whether implementation of the Modified Project would result in significant impacts. The analysis only focuses on any changes in impacts from the Approved Project (as presented in the Final EIR and Final EIS) with the addition of the proposed modifications (i.e., Modified Project).

In evaluating the changes, the impact analysis responds to the following questions for each significant criteria discussion:

- Will the Project changes result in impacts not already identified in the Final EIR and Final EIS? If there are any new impacts, are they significant?
- Will the Project changes substantially increase the severity of any significant impacts identified in the Final EIR and Final EIS?
- Is there additional feasible mitigation available to reduce or avoid the significant impacts associated with the Project changes?

For the purposes of satisfying CEQA requirements, the significance of each impact is also identified according to the following classifications: Class I: Significant impact; cannot be mitigated to a level that is less than significant; Class II: Significant impact; can be mitigated to a level that is less than significant; Class III: Adverse impact; less than significant; and Class IV: Beneficial impact.

For additional information on impact assessment methodology, specific to special-status plants and restoration, please refer to Final EIR Section 3.4.4.3 and/or Final EIS Section 3.4.4.2.

4.3.4 Environmental Impacts and Mitigation Measures

Proposed modifications to the Approved Project, including the installation of marker balls and FAA lighting in select locations, would not require an appreciable increase in ground disturbance beyond what was analyzed in the 2009 Final EIR or the Final EIS. The installation of each FAA safety light would include the light itself, as well as the photovoltaic panels (for solar-powered lights), battery, control unit, and the communications system. Where feasible, this equipment would be placed on the transmission structure as the transmission structure is constructed, minimizing additional ground disturbance. Because very little to no additional ground disturbance would occur in native vegetation or special-status species habitats, no additional impacts from the implementation of the Modified Project would occur to the majority of biological resources analyzed in the Final EIR and Final EIS. The following discussion addresses only those resources that could potentially be affected from implementation of the Modified Project in a manner that differs from the analysis presented in the Final EIR and Final EIS.

Direct and Indirect Effects Analysis

Impacts to Riparian or Natural Communities (Criterion BIO1)

As described above, implementation of the Modified Project would not result in appreciable ground disturbance beyond what was analyzed in the Final EIR and Final EIS. The replacement of seven proposed TSPs with LSTs would result in a total estimated increase in permanent impacts totaling 0.014 acre. However, this slight increase in estimated impacts is well within the 15 percent margin of error

included in the analysis of ground disturbance in the Final EIR and Final EIS (see Section 2 of the Final EIR and Final EIS), and the locations of the structures would be the same. Therefore, impacts to riparian or other natural communities associated with replacing these seven proposed TSPs with LSTs would be negligible and well within the analysis of impacts for the Approved Project. Therefore, impacts to native vegetation (Impact B-1), desert wash or riparian habitat (Impact B-2), and wildlife foraging habitat (Impact B-6) would remain as described in the Final EIR and Final EIS.

Impact B-3: The Project would result in the establishment and spread of noxious weeds.

The potential for the Project to contribute to the establishment or spread of nonnative and invasive plants was evaluated in the Final EIR and Final EIS. This potential was found to be highest during construction activities. Implementation of the Modified Project would require a minor increase in construction activities to install marker balls and aviation lighting. However, an appreciable increase in ground disturbance would not occur, and most marker balls would be installed via helicopter. Aviation lighting would be installed on towers during erection for those that are not yet constructed. For existing Approved Project towers and the few spans that would have marker balls installed via ground-based construction, activities that could introduce or spread weeds would consist of vehicle use on existing access roads and construction activities within Approved Project disturbance areas. The construction activities and equipment associated with the Modified Project are within the scope and magnitude, and are of the same types, as those analyzed in the Final EIR and Final EIS.

Marker balls have an estimated lifespan of 10 to 25 years; therefore, replacement of marker balls would occur periodically throughout the life of the Modified Project as an aspect of operations and maintenance (O&M) (SCE, 2012c). Marker balls would be replaced using the same construction techniques and activities that would be used during installation (i.e., primarily light helicopter access, but also ground-based construction on existing access roads where feasible). Ground disturbance associated with replacement of marker balls during O&M would be minimal, but could incrementally contribute to the potential for establishment and spread of invasive weeds.

Implementation of the Final EIR and Final EIS mitigation measures listed below would reduce impacts related to weeds during construction of the Modified Project. Once installed, the proposed modifications would not require additional O&M activities beyond what is required for the Approved Project, with the exception of periodic replacement of marker balls. Therefore, implementation of the Modified Project would not substantially increase the severity of previously identified impacts analyzed in the Final EIR and Final EIS related to the spread of noxious weeds.

Approved Project Mitigation Measures for Impact B-3

- B-1a Provide restoration/compensation for impacts to native vegetation communities.**
- B-2 Implement RCA Treatment Plan.**
- B-3a Prepare and implement a Weed Control Plan.**
- B-3b Remove weed seed sources from construction access routes.**
- B-3c Remove weed seed sources from assembly yards, staging areas, tower pads, pull sites, landing zones, and spur roads.**

CEQA Significance Conclusion

The Modified Project would not result in new significant impacts or substantially increase the severity of impacts related to nonnative and invasive weeds compared with the Approved Project. Therefore, with the implementation of mitigation, impacts of the Modified Project would remain less than significant (Class II).

Wildlife

This section discusses impacts to wildlife in general, particularly non-special-status species. Impacts to special-status species are described under Criteria BIO2 and BIO3.

Impact B-4: Construction activities, including the use of access roads and helicopter construction, would result in disturbance to wildlife and may result in wildlife mortality.

Construction activities associated with the Modified Project, including vehicle use of access roads, use of cranes and helicopters, and general noise and disturbance has the potential to disturb wildlife and may result in wildlife mortality. However, the construction activities and equipment associated with the Modified Project are within the scope and magnitude, and are of the same types, as those analyzed in the Final EIR and Final EIS.

In most cases, Helicopters would be used to place aviation lights and marker balls. The number of helicopter trips required to install these components is relatively small when compared to the number of helicopter trips required for the construction of structures and the stringing of conductor under the Approved Project (estimated to increase the total hours of helicopter use by about 8 percent; see Table 2.3-3). The installation of marker balls and aviation lighting and the associated construction disturbance would be limited in duration, and SCE proposes to use approved helicopter staging areas and existing airports or helipads. Furthermore, implementation of the Final EIR and Final EIS mitigation measures listed below (see Appendix C for full measure language) would reduce impacts related to disturbance of wildlife and wildlife mortality during construction of the Modified Project. Once installed, the proposed modifications would not require additional O&M activities beyond what is required for the Approved Project, with the exception of periodic replacement of marker balls as described under Impact B-3. Therefore, the Modified Project would not result in an appreciable increase in ground disturbance beyond what was analyzed in the Final EIR and Final EIS. Implementation of the Modified Project would not substantially increase the severity of previously identified impacts analyzed in the Final EIR and Final EIS related to the disturbance of wildlife and wildlife mortality.

Approved Project Mitigation Measures for Impact B-4

- B-1a Provide restoration/compensation for impacts to native vegetation communities.**
- B-1b Implement a Worker Environmental Awareness Program.**
- B-2 Implement RCA Treatment Plan.**
- B-3a Prepare and implement a Weed Control Plan.**
- AQ-1a Implement Construction Fugitive Dust Control Plan.**
- H-1a Implement an Erosion Control Plan and demonstrate compliance with water quality permits.**

CEQA Significance Conclusion

The Modified Project would not result in new significant impacts or substantially increase the severity of construction-related impacts to wildlife compared with the Approved Project. Therefore, with the implementation of mitigation, impacts of the Modified Project would remain less than significant (Class II).

Impact B-5: Construction activities conducted during the breeding season would result in the loss of nesting birds or raptors.

Construction and O&M activities associated with the Modified Project, including vehicle use of access roads, use of cranes and helicopters, and general noise and disturbance has the potential to disturb or result in the loss of nesting birds or raptors. However, as described above, construction activities and equipment associated with the Modified Project are within the scope and magnitude, and are of the same types, as those analyzed in the Final EIR and Final EIS. No appreciable increase in ground disturbance would be required. Furthermore, implementation of the Final EIR and Final EIS mitigation measures (see Appendix C for full measure language), including those listed below, would reduce impacts related to the loss of nesting birds or raptors during construction and O&M of the Modified Project. Once installed the proposed modifications would not require additional O&M activities beyond what is required for the Approved Project, with the exception of periodic replacement of marker balls as described under Impact B-3. Therefore, implementation of the Modified Project would not substantially increase the severity of impacts to nesting birds and raptors analyzed in the Final EIR and Final EIS.

Approved Project Mitigation Measures for Impact B-5

- B-1a** Provide restoration/compensation for impacts to native vegetation communities.
- B-1b** Implement a Worker Environmental Awareness Program.
- B-3a** Prepare and implement a Weed Control Plan.
- B-5** Conduct pre-construction surveys and monitoring for breeding birds.
- AQ-1a** Implement Construction Fugitive Dust Control Plan.

CEQA Significance Conclusion

The Modified Project would not result in new significant impact or substantially increase the severity of construction-related impacts to nesting birds and raptors compared with the Approved Project. Therefore, with the implementation of mitigation, impacts of the Modified Project would remain less than significant (Class II).

Impacts to Endangered or Threatened Species, or Proposed or Designated Critical Habitat (Criterion BIO2) and Effects on a candidate, Forest Service Sensitive, or special-status species (Criterion BIO3)

As described above, construction and O&M activities associated with the Modified Project, including vehicle use of access roads, use of cranes and helicopters, periodic replacement of marker balls during O&M, and general noise and disturbance has the potential to disturb listed and other special-status wildlife species. However, the construction and O&M activities associated with the Modified Project are within the scope and magnitude, and are generally of the same types, as those analyzed in the Final EIR and Final EIS and impacts to most special-status species would be the same. Mitigation measures identi-

fied in the Final EIR and Final EIS to reduce impacts to special-status species would be required for the Modified Project. In addition, measures to minimize or avoid impacts to listed species including coastal California gnatcatcher, least bell's vireo, southwestern willow flycatcher, Swainson's hawk, California condor, desert tortoise, and arroyo toad, are required under the Biological Opinion and Incidental Take Permit issued by the USFWS and CDFG, respectively, for the Approved Project. These measures, which include seasonal restrictions in sensitive locations, would also apply to any activities associated with the Modified Project. Therefore, Impacts B-7 through B-20, B-22 through B-30, B-33, and B-35 through B-38 are not discussed further.

Operation of the Modified Project would include the use of flashing and/or steady burning red lights on approximately 90 transmission towers. Operation of the aviation lights could slightly increase the risk of birds colliding with structures; this potential impact is discussed in detail below. Both the steady burning and flashing red lights have highly focused beacons to minimize light spill outside the desired directions upwards and outwards toward potential aviation traffic. To minimize light on the ground near the transmission structures, SCE would select lights with features that minimize light spill where feasible. While the aviation lights are visible for long distances, the lights do not create illumination in nearby areas and do not substantially increase night lighting. Therefore, there would be no substantial change to operational impacts to terrestrial species from the Modified Project as compared to the Approved Project.

Impact B-21: The Project could result in collision with overhead wires by State and/or federally protected birds.

The Final EIR and Final EIS found that protected bird species may collide with overhead T/Ls. Based on available information and observations made during reconnaissance surveys for the Approved Project, it is generally expected that collision mortality would be greatest where the movements of susceptible species are greatest (e.g., near wetlands, open water bodies, etc.), such as Legg Lake and Santa Fe Flood Control Basin (Aspen and H.T. Harvey & Associates, 2009 – Appendix B: Avian Risk Assessment). To reduce the potential for collisions and electrocution, SCE committed to using Avian Power Line Interaction Committee (APLIC) standards in APM BIO-9. On NFS lands additional raptor safety measures in the form of “swan wrap” (i.e., corkscrew-shaped visible markers intended to prevent bird collisions; also called “swan diverters”) was required on individual towers, shields, and conductor lines as deemed necessary by the Forest Service. With the implementation of these measures, potential collision impacts to avian species (i.e., birds) were determined to be minimized and no further mitigation was warranted.

The Modified Project would require SCE to install approximately 2,248 marker balls on approximately 276 T/L spans, and install aviation lighting on approximately 90 transmission towers. These modifications to the Approved Project are mandated to comply with FAA recommendations/requirements for aviation safety (see Section 2). As such, the Modified Project has the potential to alter avian risk for collisions with Project infrastructure in a number of ways, as described below for each component.

Marker Balls. Several studies have examined the effect of marking T/Ls on avian behavior and collision rates. Morkill and Anderson (1991) evaluated the effectiveness of marking power lines with a with a black striped yellow aviation ball to reduce sandhill crane (*Grus canadensis*) collisions. The authors evaluated behavioral response and crane mortality rates at marked and unmarked lines in Nebraska. This study documented no difference in the number of cranes flying over marked and unmarked spans and found that cranes increased altitude more and tended to react at a greater distance

to marked lines. In contrast, “flare reactions” (sudden changes in altitude or direction) were more common over unmarked spans. Additionally, a greater number of fatalities were recorded near unmarked spans. Savereno et al. (1996) evaluated avian behavior and mortality at power lines in coastal South Carolina and determined that birds changed behavior more frequently when approaching marked lines at line level and that collision rates were 53 percent lower at the lines with yellow marker balls than at unmarked lines with similar characteristics. No negative effects of marker balls were documented in the Morkill-Anderson or Savereno studies.

Other types of T/L markers designed specifically to minimize avian collision risk have also been evaluated, although there are relatively few well-designed, peer-reviewed studies (e.g., Barrientos et al., 2012; Murphy et al., 2009; Jenkins et al., 2012; Brown and Drewien, 1995; Crowder, 2000; Yee, 2008). Although none of these markers directly resemble the FAA marker balls proposed for the Modified Project, they are conceptually similar in that they increase visibility of the line, and studies have generally supported the conclusion that marking power lines reduces the overall number of bird collisions (Barrientos et al., 2012; Jenkins et al., 2010).

Barrientos et al. (2012) conducted the largest field study to date to investigate the effectiveness of wire marking in reducing collisions, and the role of power line type (transmission vs. distribution) and spiral marker size on effectiveness. Their results are consistent with previous studies: wire marking reduces, but does not eliminate, bird collisions with power lines. No influence of either marker size or power line type on collision rate was found for birds when analyzed as a whole, although mortality of great bustards (a large Eurasian species) was slightly lower when lines were marked with large spirals compared with small spirals, and in marked T/Ls compared with unmarked lines (Barrientos et al., 2012).

The literature suggests the Modified Project would slightly reduce, but not eliminate, the potential for daytime collisions along T/L spans that are outfitted with marker balls because the markers would increase visibility of the lines to birds. This effect would be most notable in areas where bird movement is expected to be highest such as Legg Lake and the Santa Fe Flood Control Basin, and possibly canyons within the ANF. The installation, operation, and maintenance of marker balls would not substantially increase the severity of impacts associated with bird collision identified in the Final EIR or Final EIS.

Aviation Lighting. The Final EIR and Final EIS did not distinguish between bird collisions with overhead T/Ls and collisions with transmission structures; however, it was concluded that bird collisions would be minimized through implementation of APM BIO-9. The addition of lighting on towers, as proposed for the Modified Project, would have the potential to disorient and attract birds migrating at night or during inclement weather when visibility is low (Evans et al., 2007; Manville, 2009; Longcore et al., 2012). Birds migrating in natural night lighting see only moonlight and starlight as consistent light sources, and use these as navigational aids during clear weather. Modern lighting has greatly altered the night environment; however, little is known about how this light affects migrant birds.

In North America, bird mortality has been documented at tall communication towers outfitted with aviation lighting since the mid-twentieth century (Evans et al., 2007; Eaton, 2003). Several studies have examined avian collision rates at towers outfitted with different types of lighting (flashing versus steady burning, colored versus white, etc.) (Kerlinger et al., 2000; Longcore and Gauthreaux, 2008; Gehring et al., 2009; Manville, 2009). The studies have generally indicated fewer mortalities occur at towers with flashing lights compared to steady burning lights, and fewer mortalities occur at towers with red

lights than white incandescent lights (although some studies have shown reduced mortality with white strobe lights compared with red steady burning and flashing lights) (Kerlinger et al., 2000; Eaton, 2003; Manville, 2005; Longcore and Gauthreaux, 2008; Gehring et al., 2009). Cloud cover and visibility may also affect the likelihood of birds striking lighted towers. Birds have long been observed to aggregate in flight around isolated bright light sources during nights with low visibility (Johns, 2011).

Evans et al. (2007) found that flashing lights or steady-burning red aviation obstruction beacons are less likely to produce bird aggregation during inclement weather. However, these results are somewhat contrary to other research. On cloudy nights birds can orient using magnetoreception (i.e., sensing the earth's magnetic field) instead of visual navigation (Evans et al., 2007). Magnetoreception appears to require a minimum level of ambient light, although this minimum is not well understood. Evans et al. hypothesized that the disorientation to red light only occurs when birds are actively using magnetoreception. If ambient light levels were too low at ground level during the study to enable magnetoreception, then the red lights would not have interfered with that process to cause the aggregation that has been documented at red lights on communication towers in numerous other studies (Evans et al., 2007).

Studies of bird collisions with lighted towers have primarily focused on communication towers (e.g., Erickson et al., 2005; Gehrig et al., 2009) rather than T/L structures. Longcore et al. (2012) compiled a database of communication towers in the United States and Canada and estimated avian mortality by tower with a regression relating avian mortality to tower height, using data from 38 studies that documented collision mortality. Using this model, the authors estimated that 6.8 million birds are killed each year at communication towers in the United States and Canada. The majority (71 percent) of the estimated mortality is attributed to the tallest 1.9 percent of towers (≥ 984 feet [300 meters] in height); while shorter towers (197-492 feet [60-150 meters]) accounted for 17 percent of estimated mortality despite comprising the vast majority of the towers utilized in the analysis (Longcore et al., 2012). Communication towers are likely to pose a greater risk to birds than transmission towers because (1) they are often considerably taller and therefore more likely to intersect the flight paths of migrating birds and (2) communication towers, especially taller towers, often are supported by guy wires. Guy wires are essentially invisible to birds under many conditions and pose a large risk of collision to birds that aggregate at lighted communication towers, as guy wires occupy far more airspace than the towers themselves (Longcore and Gauthreaux, 2008). Communication towers typically range from 199 feet above ground level to 2,000 feet (Manville, 2009), while the maximum height of transmission towers for the Approved Project is approximately 260 feet, with the majority of towers less than 200 feet tall. Studies of communication towers have consistently found a higher level of mortality at taller towers than at towers that are comparable in height to the Approved Project towers (Erickson et al., 2005; Manville, 2005; Longcore and Gauthreaux, 2008; Gehrig et al., 2009; Longcore et al., 2012). Further, the Approved Project's transmission structures do not have guy wires.

The aviation lights would primarily be powered by a bank of one to three solar panels that would be installed on each lighted transmission tower. Each panel would be 10 to 12.5 square feet. While the solar panels may present a slight collision risk to birds, the panels are a small component of the overall transmission structure (see Figure 2.3-4) and are unlikely to result in any additional hazards to birds beyond what was analyzed in the Final EIR and Final EIS.

In conclusion, the tallest guyed towers have consistently been associated with the highest levels of bird mortality and the transmission towers to be outfitted with aviation obstruction lighting under the Modified Project are comparable in height to the shortest communication towers which have generally been associated with little to no known fatalities. Therefore, the risk to birds from the addition of aviation lighting to 90 transmission towers would be slightly but not substantially greater than the collision risk as analyzed in the Final EIR and Final EIS. To further minimize the potential for collision, SCE has consulted with the FAA and would reduce the use of steady burning red lights and use only flashing red lights on structures recommended for lighting within Segment 11 on NFS lands (Const. 14, 16 and 17) (SCE, 2013c). This minimization was applied only to NFS lands due to the nature of the ANF as a relatively large, mostly undeveloped, higher elevation habitat that generally would support greater numbers and diversity of night-flying migrant birds. Smaller habitat areas south of the ANF are impacted much more by existing night lighting, lessening the risk, and therefore the need, to further consult with FAA on specific types of aviation lighting.

Installation, operation, and maintenance of aviation lighting would not substantially increase the severity of impacts identified in the Final EIR or Final EIS. No additional mitigation is required.

CEQA Significance Conclusion

Potential impacts of T/L and tower collisions of the Modified Project to State or federally protected birds, with the implementation of APM BIO-9 and the incorporation of raptor safety protection into the Project design (i.e. tower/conductor [lines] on NFS lands), would remain less than significant, and no additional mitigation is required (Class III).

Impact B-31: The Project could disturb nesting California spotted owls.

California spotted owl is a CDFG Species of Special Concern and a Forest Service Sensitive species. This species occurs in the ANF, including portions of Segments 6 and 11 of the Approved Project. Some of the occupied habitat in the Project area supports nesting California spotted owls. Potential Project impacts to nesting spotted owls were analyzed in the Final EIR and Final EIS. These impacts were minimized through the implementation of the mitigation measures listed below. Construction and O&M activities associated with the Modified Project, including vehicle use of access roads, use of cranes and helicopters, periodic replacement of marker balls, and general noise and disturbance has the potential to disturb nesting California spotted owls in the ANF. However, the activities and equipment associated with the Modified Project are within the scope and magnitude, and are of the same types, as those analyzed in the Final EIR and Final EIS. Direct and indirect impacts to nesting California spotted owls would not differ substantially from those presented in the Final EIR and Final EIS, either in scope or in magnitude.

Operation of the aviation lights would result in only a marginal increase in night lighting, particularly considering the limited number of transmission structures on which lighting would be installed within the ANF (four structures within the ANF, of which two are on NFS lands). The areas where these lights would be installed do not contain any suitable habitat or known occupied territories for spotted owls.

Implementation of the Modified Project would not substantially increase the severity of impacts to nesting California spotted owls analyzed in the Final EIR and Final EIS. Mitigation measures identified in the Final EIR and Final EIS to reduce impacts to nesting California spotted owls would be required for the Modified Project.

Approved Project Mitigation Measures for Impact B-31

- B-1b** **Implement a Worker Environmental Awareness Program.**
- B-30** **Conduct pre- and during construction nest surveys for spotted owls.**
- AQ-1a** **Implement Construction Fugitive Dust Control Plan.**

CEQA Significance Conclusion

The Modified Project would not result in new significant impacts to nesting California spotted owls or substantially increase the severity of impacts compared with the Approved Project. Therefore, with the implementation of mitigation, impacts of the Modified Project would remain less than significant (Class II).

Impact B-32: The Project could disturb nesting avian “species of special concern.”

Impacts of the Modified Project to nesting avian “species of special concern” would be the same as impacts to common nesting birds, as described under Impact B-5, above. Therefore, implementation of the Modified Project would not substantially increase the severity of impacts to nesting avian “species of special concern” analyzed in the Final EIR and Final EIS. Mitigation measures identified in the Final EIR and Final EIS to reduce impacts to nesting avian “species of special concern” would be required for the Modified Project.

Approved Project Mitigation Measures for Impact B-32

- B-1a** **Provide restoration/compensation for impacts to native vegetation communities.**
- B-1b** **Implement a Worker Environmental Awareness Program.**
- B-2** **Implement RCA Treatment Plan.**
- B-3a** **Prepare and implement a Weed Control Plan.**
- B-5** **Conduct pre-construction surveys and monitoring for breeding birds.**
- AQ-1a** **Implement Construction Fugitive Dust Control Plan.**

CEQA Significance Conclusion

The Modified Project would not result in new significant impacts or substantially increase the severity of impacts to nesting avian “species of special concern” compared with the Approved Project. Therefore, with the implementation of mitigation, impacts of the Modified Project would remain less than significant (Class II).

Impact B-34: The Project could result in transmission line strikes by special-status bat species.

Special-status and Forest Service Sensitive bat species with the potential to occur in the Project area include the pallid bat, Townsend’s big-eared bat, western red bat, hoary bat, spotted bat, western mastiff bat, big free-tailed bat, and pocketed free-tailed bat. The Final EIR and Final EIS presented analysis of the potential for the Approved Project to result in bat collisions with T/Ls. Bats rely on echolocation to navigate while flying, and can discriminate objects as small as 0.4 to 0.004 inch in size (Vaughan and Vaughan, 1986), therefore impacts related to bat collisions with Approved Project structures was found to be negligible. Because bats use echolocation, the proposed modifications to the Approved Project are not expected to affect bats differently from the Approved Project. Therefore, the

Modified Project would have no effect on bats beyond what was analyzed in the Final EIR and Final EIS.

CEQA Significance Conclusion

Impacts to special-status bat species resulting from implementation of the Modified Project would remain less than significant (Class III).

4.3.5 Cumulative Effects Analysis

Geographic Extent

The geographic extent of this cumulative effects analysis for biological resources is the same as considered for the Approved Project in Section 3.4.6.2 of the Final EIR and the Final EIS, and effects are analyzed within the context of three separate geographic regions: the Northern Region, which includes the Antelope Valley in southern Kern County and northern Los Angeles County; the San Gabriel Mountain Range within the ANF in the Central Region, including the foothill regions adjacent to the Antelope Valley and the Los Angeles Basin; and the Los Angeles Basin, including the Chino/Puente Hills in the Southern Region within southern Los Angeles County and western San Bernardino County.

Existing Cumulative Conditions

Existing cumulative conditions in the Modified Project area are largely the same as described in the Final EIR and Final EIS, with the exception that the burned areas of the Central Region are in a more developed state of post-fire recovery following the 2009 Station Fire compared with the conditions analyzed in the Final EIR and Final EIS. However, this post-fire recovery does not substantially change the conditions as analyzed for biological resources in the Final EIR and Final EIS.

Reasonably Foreseeable Future Projects and Changes

Reasonably foreseeable future projects within the Project area are expected to be characteristic of past and ongoing projects. As discussed above, ongoing development is dominated by residential home construction, clustered in and around communities on non-NFS lands. This trend in residential development is also representative of reasonably foreseeable future projects supported by the population growth forecasted throughout much of the Project area. Cumulative projects that are expected to occur in each of the three Regions are described below. A complete list of cumulative projects across the entire Modified Project is presented in Section 3.

Northern Region

The cumulative impact scenario presents data regarding population growth in Kern and Los Angeles counties. According to this information, the population in Kern County is expected to rise by 159 percent between the years 2000 and 2050. The population in Los Angeles County is expected to rise by varying degrees, depending on the city, with the cities of Lancaster and Palmdale experiencing growth of 30 percent and 38 percent, respectively. Residential and non-residential development has been necessary to accommodate the increase in population. Proposed and on-going plans demonstrate this growth, and are suitable for analyzing cumulative impacts. Development and urbanization in the Northern Region is expected to continue and increase substantially to accommodate the increasing population.

The Northern Region also extends north to the foothills of the Tehachapi Mountains near Oak Creek Road, where several wind and solar projects have been recently approved or developed, and several more are planned. In total, there are almost 20,000 acres of wind and almost 20,000 acres of solar developments planned in the region, and wind generation projects are approved and under construction on over 60,000 acres (see Tables 3-1, 3-2, and 3-4). In addition, due to the rapid growth in this region, several large-scale transportation projects are planned, including portions of the California High Speed Rail and portions of the Orangeline High Speed Maglev Project.

Central Region

The currently proposed project types described previously for past and ongoing ANF activities are representative of future ANF projects. Most of these proposed projects are focused on restoration, habitat improvement, and maintenance of existing facilities. In addition, sediment removal from several of the reservoirs on the ANF is proposed, as well as rebuilding structures damaged in the Station Fire (see Table 3-6). As presented in the cumulative scenario, some of the projects that are planned or underway in the ANF include activities to operate and maintain existing features (including Big Tujunga Dam, special use permits issued to private groups, maintenance of existing facilities, etc.), reduce fuel loads for fire safety, and maintain trails and recreational features. These projects demonstrate the Forest Service's commitment to preserve natural resources within the ANF while providing recreational opportunities for the public. Reasonably foreseeable changes to biological resources in the ANF may include improvements to and expansion of existing facilities and infrastructure (including roads), as well as the establishment of additional resources or facilities. Existing wilderness areas in the ANF will continue to be protected from development and expanded if possible (for instance, through the conversion of an Inventoried Roadless Area under consideration for wilderness designation to a designated Wilderness Area).

Southern Region

The Southern Region is predominately urban in nature, with small patches of fragmented natural habitat throughout the majority of the Los Angeles Basin. Only the foothills of the San Gabriel Mountains, Puente Hills, Chino Hills, and portions of the Montebello Hills remain as native, relatively intact habitat in the Southern Region. This general setting will likely persist into the future. Expected population growth in the Southern Region ranges from about five percent or less (City of Industry, La Cañada Flintridge, Chino Hills, San Marino) almost 90 percent (City of Ontario), between the years 2008 and 2035.

Reasonably foreseeable cumulative projects in the Southern Region include single-family or multi-family homes, commercial buildings, various industrial and infrastructure projects such as the Whittier Main Oil Field Development Project, and portions of transportation projects such as the Metro Gold Line Extension.

Cumulative Impact Analysis

Impacts of the Modified Project would contribute to cumulative impacts if they combine with similar impacts of other past, present, or reasonably foreseeable projects. Impacts are evaluated with mitigation measures incorporated, where mitigation has been proposed.

The approach to the analysis of cumulative impacts for the Modified Project is the same as the approach identified in Section 3.4.6.2 of the Final EIR and Final EIS. This analysis focuses only on the

incremental change in the contribution to cumulative impacts from the proposed modifications to the Approved Project, beyond what was analyzed for the Approved Project in the Final EIR and Final EIS. Because the Modified Project would have no additional impacts beyond what was already analyzed in the Final EIR and Final EIS for the Approved Project for a number of biological resources (see Section 4.3.3), only those impacts that were analyzed in Section 4.3.4 have been carried forward for analysis of cumulative effects.

The potential for cumulative biological resource impacts from the combination of proposed Modified Project impacts and similar impacts of other projects within the geographic scope of this analysis are described below.

- **The Project would result in the establishment and spread of noxious weeds (Impact B-3).** The construction and O&M activities and equipment associated with the Modified Project are within the scope and magnitude, and are of the same types, as those analyzed in the Final EIR and Final EIS. Therefore, the Modified Project would not contribute additionally to cumulative effects related to noxious weeds beyond the contributions of the Approved Project. As determined in the Final EIR and Final EIS for the Approved Project, Mitigation Measures B-1a (*Provide restoration/compensation for impacts to native vegetation communities*), B-2 (*Implement RCA Treatment Plan*), B-3a (*Prepare and implement a Weed Control Plan*), B-3b (*Remove weed seed sources from construction access routes*), and B-3c (*Remove weed seed sources from assembly yards, staging areas, tower pads, pull sites, landing zones, and spur roads*) would reduce cumulative impacts, but not to less-than-significant levels. The Modified Project activities do not substantially increase the severity of cumulative effects related to weeds or change the cumulative impact determination identified in the Final EIR and Final EIS.
- **Construction activities, including the use of access roads and helicopter construction, would result in disturbance to wildlife and may result in wildlife mortality (Impact B-4).** The construction and O&M activities and equipment associated with the Modified Project are within the scope and magnitude, and are of the same types, as those analyzed in the Final EIR and Final EIS. Therefore, the Modified Project would not contribute additionally to cumulative construction-related effects to wildlife beyond the contributions of the Approved Project. As determined in the Final EIR and Final EIS for the Approved Project, Mitigation Measures B-1a (*Provide restoration/compensation for impacts to native vegetation communities*), B-1b (*Implement a Worker Environmental Awareness Program*), B-2 (*Implement RCA Treatment Plan*), B-3a (*Prepare and implement a Weed Control Plan*), H-1a (*Implement an Erosion Control Plan and demonstrate compliance with water quality permits*), and AQ-1a (*Implement Construction Fugitive Dust Control Plan*) would reduce the Approved Project's incremental contribution to cumulative effects to wildlife, but not to less-than-significant levels. The Modified Project activities do not substantially increase the severity of construction-related cumulative effects to wildlife or change the cumulative impact determination identified in the Final EIR and Final EIS.
- **Construction activities conducted during the breeding season would result in the loss of nesting birds or raptors (Impact B-5).** The construction and O&M activities and equipment associated with the Modified Project are within the scope and magnitude, and are of the same types, as those analyzed in the Final EIR and Final EIS. Therefore, the Modified Project would not contribute additionally to cumulative construction-related effects to nesting birds beyond the contributions of the Approved Project. As determined in the Final EIR and Final EIS for the Approved Project, Mitigation Measures B-1a (*Provide restoration/compensation for impacts to native vegetation communities*), B-1b (*Implement a Worker Environmental Awareness Program*), B-3a (*Prepare and implement a Weed Control Plan*), B-5 (*Conduct protocol or focused surveys for listed riparian birds and avoid occupied habitat*), and AQ-1a (*Implement Construction Fugitive Dust Control Plan*) would reduce the Approved Project's incremental contribution to cumulative impacts, but not to less-than-significant levels. The Modified Project activities do not substantially increase the severity of construction-related cumulative effects to nesting birds or change the cumulative impact determination identified in the Final EIR and Final EIS.
- **The Project could result in collision with overhead wires by State and/or federally protected birds (Impact B-21).** The Modified Project includes the installation of marker balls on select spans, which may slightly decrease the potential for birds to collide with the lines. The aviation obstruction lighting may slightly

increase the potential for night-migrating birds to collide with Project structures. However, overall, the Modified Project would not substantially alter the risk of birds colliding with Project features over what was analyzed for the Approved Project in the Final EIR and Final EIS. Therefore, the incremental contribution to cumulative impacts to state or federally protected birds would remain the same. The modifications to the Approved Project do not substantially increase or decrease the severity of cumulative collision-related effects to birds or change the cumulative impact determination identified in the Final EIR and Final EIS.

- **The Project could disturb nesting California spotted owls (Impact B-31).** The construction and O&M activities and equipment associated with the Modified Project are within the scope and magnitude, and are of the same types, as those analyzed in the Final EIR and Final EIS. Therefore, the Modified Project would not contribute additionally to cumulative effects to nesting spotted owls during construction beyond the contributions of the Approved Project. As determined in the Final EIR and Final EIS for the Approved Project, Mitigation Measures B-1b (*Implement a Worker Environmental Awareness Program*), B-30 (*Conduct pre- and during construction nest surveys for spotted owl*), and AQ-1a (*Implement Construction Fugitive Dust Control Plan*), would reduce these impacts to less than cumulatively considerable (Class III). The addition of aviation lighting is unlikely to disturb nesting spotted owls due to lack of habitat in the areas where they would be installed, and the lights would be directed skyward to minimize light spill into adjacent areas or at ground level. Further, there are no other sources of significant night lighting in the vicinity of occupied California spotted owl habitat on the ANF. Because spotted owls nest in densely canopied forests, they are further shielded from potential light effects from the aviation lighting or other sources, and this is not a cumulatively significant impact. The Modified Project would not substantially increase the severity of cumulative effects to nesting California spotted owls or change the cumulative impact determination identified in the Final EIR and Final EIS.
- **The Project could disturb nesting avian “species of special concern” (Impact B-32).** The construction, operations, and maintenance activities and equipment associated with the Modified Project are within the scope and magnitude, and are of the same types, as those analyzed in the Final EIR and Final EIS. Therefore, the Modified Project would not result in a cumulatively considerable contribution ~~additionally~~ to cumulative construction-related effects to nesting avian “species of special concern.” As determined in the Final EIR and Final EIS for the Approved Project, Mitigation Measures B-1a (*Provide restoration/compensation for impacts to native vegetation communities*), B-1b (*Implement a Worker Environmental Awareness Program*), B-2 (*Implement RCA Treatment Plan*), B-3a (*Prepare and implement a Weed Control Plan*), B-5 (*Conduct protocol or focused surveys for listed riparian birds and avoid occupied habitat*), and AQ-1a (*Implement Construction Fugitive Dust Control Plan*) would reduce the Approved Project’s incremental contribution to cumulative impacts, but not to less-than-significant levels. The Modified Project activities do not substantially increase the severity of construction-related cumulative effects to nesting avian “species of special concern” or change the cumulative impact determination identified in the Final EIR and Final EIS.
- **The Project could result in transmission line strikes with special-status bat species (Impact B-34).** As determined in the Final EIR and Final EIS, other regional T/L projects in combination with the Approved Project would cumulatively increase the probability of T/L strikes for special-status bat species. However, as discussed in Section 3.4.6.1 (Direct and Indirect Effects Analysis) of the Final EIR and Final EIS, the frequency of T/L strikes by special-status bats is expected to be quite low despite these cumulative effects, due to the ability of bats to detect and avoid T/Ls during echolocation. The modifications to the Approved Project do not substantially increase or decrease the severity of cumulative effects to bats from collisions with Project features or change the cumulative impact determination identified in the Final EIR and Final EIS.

Mitigation to Reduce the Modified Project’s Contribution to Significant Cumulative Effects

The Modified Project would not substantially increase the contribution to cumulative effects to biological resources identified for the Approved Project, and the proposed modifications would not change the cumulative impact determinations identified in the Final EIR and Final EIS for any biological resources. Therefore, additional mitigation to reduce the Modified Project’s incremental contribution to cumulative impacts is not required.

4.3.6 Comparison of Alternatives

This comparison of alternatives focuses on the differences between the Approved Project (No Project Modifications/No Action Alternative) and the changes that would result with implementation of the Modified Project. Table 4.3-1 provides a side-by-side comparison, summarizing the analysis presented above in Sections 4.3.4 and 4.3.5.

Table 4.3-1. Comparison of Alternatives – Biological Resources		
Project Component / Impact	Approved Project ¹ (No Project / No Action Alternative)	Modified Project
Structures with Aviation Lights	0	90
T/L Spans with FAA Marker Balls	0	276
Total Marker Balls	0	2,248
Max. Helicopter Hours/Day	141	151
Helicopter Use – Working Hours	13,971	14,799 (828 additional)
Total Helicopter Use (includes idle hours)	15,317	16,500 (1,183 additional)
Loss or degradation of riparian communities	Approx. 11.1 acres of riparian communities will be degraded or impacted.	No appreciable increase in ground disturb- ance; impacts would be the same as the Approved Project.
Potential to spread noxious weeds	Approx. 181.9 miles of access and spur roads would be constructed and improved and approx. 1,526 acres of ground- disturbing activities would result as part of construction.	Minor increase in construction activities, but no appreciable increase in ground disturbance; impacts would be the same as the Approved Project.
Disturbance to common wildlife, nesting birds and raptors, and special-status species	Noise would occur from on-road vehicle trips and helicopter trips as part of construction.	Slight increase in helicopter trips would increase disturbance to wildlife during construction, but impacts would be within the scope and magnitude of those addressed for the Approved Project.
T/L strikes by birds and bats	Potential for T/L strikes and electrocutions of birds along approx. 173 miles of new T/L.	Slightly reduced risk of daytime collisions for spans outfitted with marker balls, especially where movements of susceptible species are greatest (e.g., Legg Lake, Santa Fe Flood Control Basin, and possibly canyons in the ANF). Slightly, but not substantially greater risk of nighttime collisions due to aviation lighting. Bats are not expected to be affected by marker balls and lighting; impacts for bats would be the same as the Approved Project.
Cumulative impacts to biological resources	Would result in cumulative impacts related to spread of weeds, disturbance to nesting birds and other wildlife during construction, and disturbance to special-status wildlife. Would also result in cumulative impacts to birds and bats from collisions with overhead lines.	No substantial change in the contribution to cumulative effects compared to the Approved Project.

¹ – The Approved Project is based on the originally approved overhead design.